REMARKS

The Applicants appreciate the thorough examination of the present application that is reflected in the Official Action of October 21, 2004. In response thereto, Claims 1-3 and 5-10 have been amended. Applicants respectfully submit that all of the pending claims are patentable for at least the reasons that will now be explained.

Amended Claims 1-3 and 5-10 Overcome the Objections and Rejections Under Section 112

Claims 1-3 and 5-10 have been amended to clarify the claimed alternatives and conditions. Applicants submit that Amended Claims 1-3 and 5-10 overcome the stated objections, and request withdrawal of the objections.

Claims 1-2, 5-6, and 8-9 have been amended to overcome the stated rejections thereof based on 35 U.S.C. Sec. 112, first paragraph. Applicants submit that these amendments also overcome the rejection based on 35 U.S.C. Sec. 112, second paragraph. Accordingly, applicants request withdrawal of the rejections under 35 U.S.C. Sec. 112, first paragraph and second paragraph.

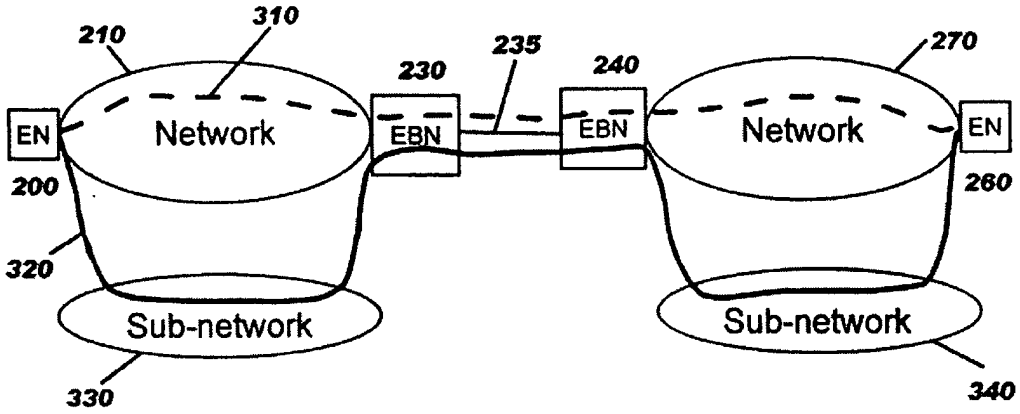
Because these claims have only been amended to address the stated objections and rejections, and not to overcome prior art, the full range of equivalents is therefore available.

Amended Independent Claims 1, 4, 5, and 8 Are Patentable Over Li

Claims 1-10 stand rejected under 35 U.S.C. Sec. 102(e) as anticipated by U.S. Patent No. 6,751,220 to Li.

The Specification explains with regard to FIG. 3 (shown below) that, when data is routed through networks in a conventional manner, a resulting "data transmission path 320 may not bypass the [extended border nodes] EBNs 230, 240 through which [a] location protocol traversed [, and that] this is so even if underlying networks 330 and 340 are the same underlying network, such as the public Internet or other commonly addressable collection of nodes and links." (Specification, Page 10, lines 5-8). It further explains that, "as a result, the data transmission path 320 is not truly optimized in many cases." (Specification, Page 10, lines 8-9).

FIG. 3 OF PRESENT APPLICATION



Claims 1-10 are directed to improving connecting among topology subnets. In particular, the Specification explains that "data [can be routed] through networks which are connected to a common underlying network or connection network which extends beyond the individual topology subnets." (Specification, Page 19, lines 11-14). It also explains that "[T]his technique adheres to the topology isolation requirement of each network, yet enables the data transmission path to bypass EBNs through which the location protocol traveled, providing optimized data transmission paths which may in many cases be shorter than the data transmission paths which are available using prior art techniques." (Specification, Page 19, lines 14-17).

In particular, Amended independent Claim 1 recites (emphasis added):

1. (Currently Amended) A method of improving connectivity among topology subnets using a common connection network, comprising:

determining, by a border node located at a border of a particular one of the topology subnets, one or more links between the border node and a neighboring border node located at the border of a different one of the topology subnets, wherein a first session endpoint resides in the particular one of the topology subnets and has connectivity to a global virtual routing node ("GVRN");

creating a list of the determined links;

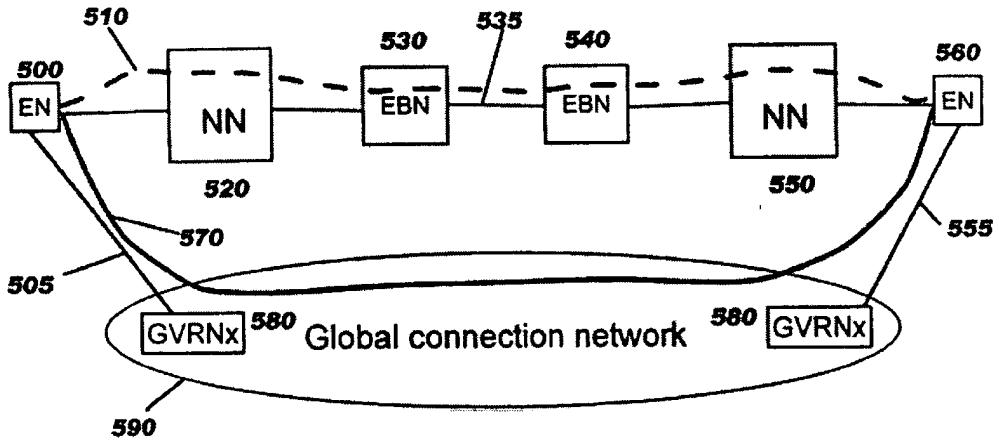
determining that the first session endpoint has connectivity to the GVRN and adding link information to the list to represent the determined connectivity of the first session endpoint to the GVRN; and

forwarding the list to the neighboring border node.

Accordingly, a border node, that is located at a border of a topology subnet, determines one or more links between the border node and a neighboring border node located at the border of a different one of the topology subnets. A list of the determined links is then created. A determination is made that the first session endpoint has connectivity to the GVRN, and link information is added to the list to represent the determined connectivity of the first session endpoint to the GVRN. The list is then forwarded to the neighboring border node.

For example, with reference to FIG. 5 (shown below) of the present application, because the endpoints 500 and 560 are connected to the GVRN 590 and such connectivity is determined, data may be routed between the endpoints 500 and 560 through EBNs 540 and 540 (illustrated by a dashed line path), or it may be routed through GVRN 580 (illustrated by a solid line path) and associated global connection network 590.

FIG. 5 OF PRESENT APPLICATION



In rejecting Claim 1, the Office Action contends that Li determines "whether [a] first session endpoint has connectivity to a global virtual routing node ("GVRN"), and [adds] the link information to the created list to represent this connectivity if so (figure 2-4; and column 1, lines 58-62)". (Office Action, Page 5). However, Li describes with regard to FIG. 1 that a "network 10 includes a plurality of network devices ("routers 12") that communicate via the Internet." (Li,

Col. 2, lines 64-67, emphasis added). As shown in FIG. 1 and described in Li, only a single path exists among the routers 12, which is through the Internet. Li describes that the "routers 12 also may form a plurality of conventional virtual private networks ("VPNs")." (Li, Col. 3, lines 2-4).

Applicants acknowledge that the VPNs of Li may be analogous to the recitation in Claim 1 of "topology subnets", and that the routing tables shown in FIG. 2 of Li may be analogous to the recitation in Claim 1 of "determining, by a border node located at a border of a particular one of the topology subnets, one or more links between the border node and a neighboring border node located at the border of a different one of the topology subnets." However, Li appears to be directed to solving a problem of that VPN addresses are not in a format that complies with the class A-E format, and, it explains how VPN addresses in routing information can be converted into a format of one of the A-E classes depending upon whether the addressed VPN is a small node or a large node VPN. The converted address may then be stored in the routing table and used.

Li does not describe that a decision is made as to whether to route data over one network instead of over another network. Instead, Li describes only one routing path, where the routing address, as describe above, may be converted to different classes (A-E) depending upon the addressed VPN being a small or large node VPN.

Moreover, Li does not describe or show that the routers 12 can be connected to a border node and to a GVRN. Additionally, Li does not describe or suggest that a determination can be made that a first session endpoint has connectivity to a GVRN, or that link information can be added to a list of determined links to represent the determined connectivity of the first session endpoint to the GVRN, such as is recited in Claim 1. For at least these reasons, Applicants respectfully submit that Claim 1 is not anticipated by Li.

Independent Claims 4, 5, 8 include analogous recitations to Claim 1, and are submitted to be patentable over Li for at least the reasons provided above.

Dependent Claims 2-3, 6-7, and 9-10 are patentable at least per the patentability of the independent claims from which they depend. Moreover, Applicants submit that these claims provide further bases for patentability, as will now be explained below.

Dependent Claims 2-3, 6-7, and 9-10 Are Patentable Over Li

Dependent Claim 2 recites:

> 2. (Currently Amended) The method according to Claim 1, further comprising:
> receiving, at the neighboring border node, the list;
> determining whether a second session endpoint, which resides in the different one of the topology subnets, has connectivity to the GVRN or to another GVRN, and, when the second session endpoint has connectivity to the GVRN or to another GVRN, adding link information to the list to represent the determined connectivity; and
> using the list to select a data transmission path between the first session endpoint and the second session endpoint.

Accordingly, Claim 2 recites that the neighboring border nodes receives the list of links, which includes the determined connectivity of the first session endpoint to the GVRN. A determination is made as to whether a second session endpoint, which resides in the different one of the topology subnets, has connectivity to the GVRN or to another GVRN. When the second session endpoint has connectivity to the GVRN or to another GVRN, that determined connectivity is added as link information to the list.

In rejecting Claim 2, the Office Action contends that Li discloses "determining whether the second session endpoint has connectivity to the GVRN or to another GVRN, and adding link information to the created list to represent this connectivity if so" at Col. 7, lines 39-45 and Col. 6, lines 3-35. However, the referenced portions of Li appear to provide no such teaching. Instead, as explained above, Li does not describe that a decision is made as to whether to route data over one network instead of over another network. Instead, Li describes only one routing path, where the routing address, as describe above, may be converted to different classes (A-E) depending upon the addressed VPN being a small or large node VPN.

Also as explained above, Li does not disclose that an endpoint that reside in a topology subnet can be connected to a GVRN. Consequently, Li does not disclose that a determination would be made as to whether a second session endpoint, which resides in the different one of the topology subnets, has connectivity to the GVRN or to another GVRN. Moreover, Li does not

disclose that when the second session endpoint has connectivity to the GVRN or to another GVRN, that determined connectivity would be adding as link information to the list.

For at least these reasons, Applicants respectfully submit that Claim 2 is not anticipated by Li.

Claims 6 and 9 include analogous recitations to Claim 2, and are submitted to be patentable over Li for at least the reasons provided above.

Claim 3 recites:

> 3. (Currently Amended) The method according to Claim 2, wherein using the list to select a data transmission path further comprises checking to see if both the first session endpoint and the second session endpoint have connectivity to a common GVRN, and, when both the first session endpoint and the second session endpoint have connectivity to a single GVRN, determining whether selecting the common GVRN as a node in the data transmission path results in an optimal data transmission path.

Accordingly, the list is used to select a data transmission path by checking to see if both the first session endpoint and the second session endpoint have connectivity to a common GVRN, and, when both the first session endpoint and the second session endpoint have connectivity to a single GVRN, a determination is made as to whether selecting the common GVRN as a node in the data transmission path results in an optimal data transmission path.

Again, the Office Action cites to portions of Li that describe conversion of VPN addresses in routing information to one of the A-E classes depending upon whether the addressed VPN is a small node or a large node VPN. As explained above, Li does not disclose that an endpoint can be connected to a topology subnet and to a GVRN. Moreover, Li provides no disclosure of determining an optimal data transmission path, and, consequently, does not disclose checking to see if both the first session endpoint and the second session endpoint have connectivity to a common GVRN, and, when both the first session endpoint and the second session endpoint have connectivity to a single GVRN, determining whether selecting the common GVRN as a node in the data transmission path results in an optimal data transmission

path. For at least these reasons, Applicants respectfully submit that Claim 3 is not anticipated by Li.

Claims 7 and 10 include analogous recitations to Claim 3, and are submitted to be patentable over Li for at least the reasons provided above.

CONCLUSION

In light of the above amendments and remarks, Applicants respectfully submit that the above-entitled application is now in condition for allowance. Favorable reconsideration of this application, as amended, is respectfully requested.

Respectfully submitted,

David K. Purks
Registration No. 40,133

USPTO Customer No. 46589
Myers Bigel Sibley & Sajovec
Post Office Box 37428
Raleigh, North Carolina 27627
Telephone: 919/854-1400
Facsimile: 919/854-1401